Amendments to the Claims:

Claims 1 through 45 (Canceled).

46. (Previously presented) High rate filtration apparatus for removing suspended solids from liquids, said apparatus comprising:

a) a filter housing having an axial flow direction therethrough for liquid;

b) a first perforated panel fixedly secured in said housing transverse to said flow direction;

c) a second perforated panel movably secured in said housing transverse to said flow direction and spaced from said first perforated panel;

d) an influent liquid conduit located adjacent said fixed first panel, said influent conduit connected to a source of liquid having suspended solids therein;

e) an effluent liquid conduit located adjacent said movable second panel thereby establishing said axial flow direction through said housing from said influent conduit to said effluent conduit;

f) substantially spherical and compressible filtration media of individual, fibrous lumps of bundled, crimped fibers located between said first and second panels; and

g) a piston for moving said second perforated panel toward and away from said fixed first panel to define:

i) a fixed filter bed of said media compressed between said panels during filtration, said filter bed having a porosity gradient across the bed proceeding progressively from more porous to less porous in said axial flow direction; and

ii) a cleaning chamber between said panels during washing wherein said second panel is moved away from said first panel to provide said media in an uncompressed condition for washing in said axial flow direction.

47. (Cancelled).

48. (Previously presented) The high rate filtration apparatus of Claim 46 wherein said effluent liquid conduit comprises a filtered liquid effluent conduit and a separate wash water effluent conduit.

49. (Previously presented) The high rate filtration apparatus of Claim 46 further comprising a distribution plenum located between said liquid influent conduit and said fixed first perforated panel, whereby liquid is evenly distributed through said first panel and into said filter bed.

50. (Previously presented) The high rate filtration apparatus of Claim 46 wherein said axial flow direction is upflow, said fixed first panel is located below said movable second panel, said influent liquid conduit is located below said fixed first panel, and said effluent liquid conduit is located above said movable second panel.

51. (Previously presented) The high rate filtration apparatus of Claim 50 further comprising a gas injection conduit located adjacent said first panel for supplying air to mechanically shear trapped solids from said media in said cleaning chamber.

52. (Previously presented) The high rate filtration apparatus of Claim 51 wherein said gas injection conduit comprises two air conduits whereby air injection is alternated between said two conduits to increase the mechanical effect of shearing trapped solids from said media.

53. (Cancelled).

54. (Cancelled).

55. (Previously presented) The high rate filtration apparatus of Claim 46 wherein collector size, effective pore size, and depth of said filter bed are adjustable by movement of said second panel as filtration proceeds, whereby head loss can be adjusted and filtration efficiency maintained during filtration by mechanically expanding said fixed bed.

56. (Previously presented) The high rate filtration apparatus of Claim 46 further comprising multiple cells of filter housings each having independently operable influent and effluent conduits wherein one or more cells can be defined as cleaning chambers independently of other cells defined as filter beds.

57. (Currently amended) Up-flow high rate filtration apparatus for removing suspended solids from waste water, said apparatus comprising:

a) a vertically oriented filter housing having a waste water influent conduit located in a lower portion thereof and separate filtered water and wash water effluent conduits located in an upper portion thereof, said conduits establishing an upward axial flow direction through said housing;

b) a first perforated panel fixedly secured in said housing above said influent waste water conduit and transverse to said axial flow direction;

c) a second perforated panel movably secured in said housing transverse to said axial flow direction, above said first panel and spaced therefrom, and below said filtered water and wash water effluent conduits;

d) a distribution plenum located between said influent waste water conduit and said fixed first perforated panel, whereby waste water is evenly distributed through said first panel in said axial flow direction;

e) substantially spherical and compressible filtration media of individual, fibrous lumps of bundled, crimped fibers located between said first and second panels;

g) a piston for moving said second perforated panel toward and away from said fixed first panel to define:

i) a fixed filter bed of media compressed between said panels ~~at a bed compression ratio of from about 15 to 40 percent during filtration~~, said fixed filter bed having a porosity gradient across the bed proceeding progressively from more porous to less porous in said axial flow direction, wherein collector size, effective pore size, and and depth of said filter bed are adjustable by movement of said second panel as filtration proceeds ~~at a flow rate of about 820 to 2050 L/m2°min (20 to 50 gal/ft2°min),~~ and whereby head loss can be adjusted and filtration efficiency maintained during filtration by mechanically expanding said fixed bed; and

ii) a cleaning chamber between said panels during washing wherein said second panel is moved away from said first panel to provide said media in an uncompressed condition for washing ~~at a rate of from about 1 to 6 percent based on the total fluid passing through the filter~~; and

h) a pair of air conduits located below said fixed first panel on opposite sides of said housing whereby air injection is alternated between said conduits into said cleaning chamber to increase the mechanical effect of shearing trapped solids from said media.

58. (Withdrawn) An activated sludge plant for the biological treatment of waste water, said plant comprising:

a) an activated sludge reactor for digestion by a biological sludge of carbonaceous organic compounds in influent waste water;

b) a clarifier in flow receiving communication with said reactor for receiving a mixture of sludge and waste water from said reactor and separating the sludge from the wastewater; and

c) a depth, monomedia, high filtration rate, low-volume wash water, upflow filter in flow receiving communication with said clarifier for receiving clarified waste water from said clarifier and removing suspended particles from said waste water to

provide a treated waste water effluent from said plant, said monomedia low-volume wash water upflow filter comprising:

i) a vertically oriented filter housing having conduits for clarifed waste water influent, treated waste water effluent, and washing water effluent, said washing water effluent conduit in flow delivering communication with said activated sludge reactor for recycling wash water to said reactor;

ii) substantially spherical and compressible filtration media of individual, fibrous lumps of bundled, crimped fibers located in said filter housing for receiving influent and providing effluent;

iii) a first perforated panel fixedly secured in said housing and defining a lower retainer for said filtration media;

iv) a second perforated panel movably secured in said housing and spaced from said first perforated panel to define an upper retainer for said filtration media; and

v) a piston for moving said second perforated panel toward and away from said fixed first panel to compress said media during filtration between said panels at a bed compression ratio of from about 15 to 40 percent, said filtration media having a porosity gradient across the bed proceeding progressively upflow from more porous to less porous, wherein collector size, effective pore size, and and depth of said filtration media are adjustable by movement of said second panel to mechanically expand said fixed bed as filtration proceeds at a flow rate of from about 820 to 2050 L/m2°min (20 to 50 gal/ft2°min), whereby head loss can be adjusted and filtration efficiency maintained during filtration, and to provide said filtration media in an uncompressed condition for washing at a low-volume wash water rate of from about 1 to 6 percent based on the total fluid passing through the filter.

59. (Withdrawn) The activated sludge plant of Claim 58 further comprising a pair of air conduits located on opposite sides of said housing to inject washing air into said filtration media in an uncompressed condition whereby air injection is alternated between said conduits to increase the mechanical effect of shearing trapped solids from said media.

60. (Withdrawn) The activated sludge plant of Claim 58 wherein said filter comprises multiple filter housings each having independently operable influent and effluent conduits and movable second panels wherein filtration media in one or more filter housings can be washed independently of other filter housings.

61. (Previously presented) The high rate filtration apparatus of Claim 46 wherein said influent conduit is connected to said cleaning chamber and supplies liquid having suspended solids therein to said cleaning chamber for washing.

62. (Previously presented) The up-flow high rate filtration apparatus of Claim 57 wherein said waste water influent conduit is connected to said cleaning chamber and supplies waste water thereto for washing.

63. (Withdrawn) The activated sludge plant of Claim 58 wherein said clarified waste water influent conduit supplies waste water to said filter having said filter media in an uncompressed condition for washing.